

## Grazing Land

Nearly 35 percent of U.S. land area, 782 million acres in 2002, is grazing land—**cropland pasture**, **grassland pasture and range**, and **forest land grazed** (table 1; see Appendix for detailed descriptions of terms in **bold**). While this estimate of total grazing area includes forest land on which grazing occurs as a multiple use, the estimate excludes land grazed before or after crops were harvested. Examples include fall and winter grazing of small grains and after-harvest grazing of hay land. The three types of grazing land measured differed greatly in terms of acreage, distribution, productivity, and other characteristics. (See Daugherty, 1989, for an overview of U.S. grazing lands from 1950 to 1982.)

### Cropland Pasture

The smallest but generally most productive component of grazing acreage, cropland pasture, occupied 3 percent of total U.S. land area and accounted for 8 percent of total pasture and range acreage in 2002. While cropland pasture is considered part of the cropland base, it may be marginal for crop use and remain in pasture for extended periods. Two-thirds of the 62 million acres in this category were concentrated in the Southern Plains, Corn Belt, Northern Plains, and Appalachian regions. Cropland pasture comprises a relatively high percentage of total pasture and range in the Appalachian, Corn Belt, Northeast, and Lake States regions. However, the share of land area in grassland pasture and range is much higher in the Plains and Mountain regions than in the East. Cropland pasture is significant in the West, but minor in comparison to the acreages of grassland pasture and range and grazed forest land.

Cropland pasture may shift to cropland used for crops when commodity prices are high. However, these shifts are much more frequent between idled cropland and cropland used for crops because idled cropland is generally more suited to crop production than cropland pasture. Also, these shifts may be more pronounced in regions with higher quality cropland pasture, such as the Corn Belt.

### Grassland Pasture and Range

Grazing is the predominant use on 586 million acres of grassland pasture and range, over half of which is in the Mountain region ("grassland pasture" is the name more commonly used in the eastern United States). Another 20 percent is in the Southern Plains. The Northern Plains and Pacific regions together account for 20 percent. These four regions have about 542 million acres (93 percent) of U.S. grassland pasture and range. The rest is distributed among the remaining regions, none of which have more than 2 percent of the total. Of the types of grazing land, grassland pasture and range dominate in all regions except the Appalachian and Delta regions, where cropland pasture and forested grazing predominate, respectively.

Grassland pasture and range account for 55 percent of all land area in both the Southern Plains and Mountain regions. Grazing of this varied cover type accounts for 35 percent of the area in the Northern Plains, where a larger proportion of the land area is used for crops, and 26 percent in the Pacific

region, where forest-use land predominates. In other regions, except Hawaii, the proportion of area in grassland pasture and range varied from 7 percent in the Southeast to less than 1 percent in Alaska. Nearly a third of the land in Hawaii is grazed, but because of the State's small size, grassland pasture there contributes little to the total national acreage.

## Grazed Forest Land

The 134 million acres of grazed forest land include acreage in open forest, land reverting to forest, and other forested areas with grass or other forage growth that are grazed to some extent.<sup>10</sup> Grazed forest land ranged from less than 1 million acres in Alaska and Hawaii to 63 million acres in the Mountain region. Acreage of this pasture type is relatively high throughout the West, Southwest, and South, but is the dominant type only in the Delta States. Regional variations in the amount of grazed forest land are a function of the productivity of forested grazing, the demand for grazing, the amount of forest land, and factors such as species composition and stand density.

The value of forest land for grazing varies widely in the different regions, depending on climate, soils, tree canopies, and other factors. Values are relatively high on open stands of pine in the South, for example, where climate permits grazing throughout the year. Upland hardwoods, on the other hand, with a more complete canopy, allow little production of forage, although substantial acreage is grazed because of their availability on farms. Ponderosa pine and other open forest types in the West enable seasonal grazing, but forest land with thick growing trees, such as fir, offers little grazing value.

## Trends in Grazing Acreage

Total grazing land in 2002 accounted for 783 million acres, the lowest amount since the Major Land Uses series began in 1945. Total grazing land declined by about 268 million acres (about 25 percent) from 1945 to 2002.<sup>11</sup> Total nonforested grazing acreage (the combined acreage of cropland pasture and grassland pasture and range) was just over 648 million acres in 2002. This was near the 1997 level, the lowest level since 1945 when it totaled 706 million acres. Estimated acreage of grassland pasture and range increased by almost 7 million acres from 1997 to 2002. However, acreage of all grazing land declined from 1997 to 2002 (table 7). This continues a downward trend that began in 1945. While cropland pasture and grassland pasture and range have increased in some years, grazed forest land has consistently declined. Cropland pasture and grazed forest land decreased by 6 million acres each from 1997 to 2002, which might reflect a transition of cropland used for crops and pasture to permanent pasture as well as reclassification of urban land under the 2000 Census.

Pasture and range acreage sometimes converts to cropland when demand for crop products is high. However, grazing lands may be less economically suited for crop production than for other uses. Substantial acreages of land used for grazing has shifted to recreational, wildlife, and environmental uses. Under favorable growing conditions, particularly in the South, pasture land may revert to forest. Some acres were converted to urban uses. These forces have combined to cause a long-term net decline in pasture and range

<sup>10</sup> Estimates of total grazed forest acreage are based on acreage estimates of active grazing allotments in national forests, plus grazed acreage on non-federally owned forests from the Census of Agriculture and the National Resources Inventory (NRI). These estimates require reconciliation of various sources and thus depend on more assumptions than estimates derived from a single source, such as total forest acreage obtained from the Forest Service.

<sup>11</sup> Statistics for 1945 do not include Alaska and Hawaii. Nevertheless, these States have little influence on total grazing acreage, accounting for just 0.22 percent of the total grazing area in 1949.

Table 7

**Total pasture and range, by type, United States, 1949-2002**

Year	Cropland pasture <sup>1</sup>	Grassland pasture and range <sup>2</sup>	Subtotal <sup>3</sup>	Grazed forest land <sup>4</sup>	Total <sup>3</sup>
<i>Million acres</i>					
1949	69	632	702	320	1,022
1954	66	634	700	301	1,001
1959	66	633	699	245	943
1964	57	640	698	225	922
1969	88	604	692	198	890
1974	83	598	681	179	860
1978	76	587	663	172	835
1982	65	597	662	158	820
1987	65	591	656	155	811
1992	67	591	658	145	803
1997	68	580	648	141	788
2002	62	587	648	134	783

<sup>1</sup> Cropland used only for pasture estimate based on USDA/NASS, 2005.

<sup>2</sup> Grassland and other nonforested pasture and range in farms (USDA/NASS, 1999a) plus estimates of open or nonforested grazing land not in farms.

<sup>3</sup> Distribution may not add to totals due to rounding.

<sup>4</sup> Woodland grazed in farms (USDA/NASS, 2004a) plus an approximation of forested grazing on Federal and non-Federal land not in farms.

Sources: Estimates based on reports and records of the Bureau of the Census and Federal and State land management and conservation agencies. The estimates are not strictly comparable. Estimates for 2002 based on DOI/BLM, 2003; USDA/FS 1989; GSA 2001; USDA/NASS, 2004a, 2004b, 2005; and USDA/NRCS, 2000, 2004a. Estimates for years prior to 2002 are from Daugherty, 1989 and Frey, 1983 plus previous *Major Land Uses* reports: Daugherty, 1991, 1995; Frey, 1973, 1979, 1982; Frey and Hexem, 1985; Frey et al., 1968; Vesterby and Krupa, 2001; Wooten et al., 1962; Wooten and Anderson, 1957; and Wooten, 1953.

acreage, from over 1 billion acres in 1949 to 783 million acres in 2002 (table 7).

The combined acreage of cropland pasture and grassland pasture and range declined from 1949 through 1997 for a net decrease of 54 million acres in the 48 contiguous States. However, not all regions experienced long-term declines in nonforested pasture and range (see Major Land Uses data series for trends by region: <http://www.ers.usda.gov/data/majorlanduses/>). Between 1949 and 2002, pasture and range increased by 31 million acres in the Southern Plains and 2 million acres in the Southeast. These increases offset large declines in the Mountain (42 million acres) and Pacific regions (11 million acres). Increases in the regions east of the Rocky Mountains were associated with declines in acreage used for crops and with clearing and reclassification of forest land. A part of this increased acreage had been classed as forested grazing land. Large decreases in the Western States mainly involved Federal range that was withdrawn for wilderness and similar areas, or that was reclassified as unsuitable for grazing.

Grazed forest land decreased by nearly 186 million acres, or 58 percent, from 1949 to 2002 (table 7), and by 6 million acres during 1997-2002. Among reasons for the long decline in forest grazing activity were fewer farms and less land in farms, increases in forest stand density (restricting grazing possibilities), and improvements in both livestock feeding and forest management practices. All of these factors have been especially important in the South, where woodland grazing acreages have been high.

## Forest-Use Land

**Forest land** used for all purposes totaled 749 million acres in 2002 (table 8), an increase of 2 million acres over 1997 (see Appendix for detailed descriptions of terms in **bold**). In the 48 contiguous States, the increase was 2.5 million acres, while Alaska lost 0.5 million acres from 1997 to 2002. Forest land increased in the Appalachian, Southeast, Mountain, and Pacific regions and either decreased slightly or remained constant in the other regions of the country.

More than two-thirds of the forest land in 2002 was **timberland**—forests capable of commercial timber production not removed from timber use by statute or administrative regulation—and the remainder was a combination of **reserved forest land** and **other forest land**. Of the total, about 67 percent was non-Federal (Smith et al., 2004). Most of the forest area serves multiple purposes. For example, livestock grazing occurs on about 134 million acres or 18 percent of the acreage (see “Grazed Forest Land,” p. 23) and large areas are available for recreational use (see “Special Uses,” p. 31). Forest land provides watershed protection, wildlife habitat, and parks, and serves other special purposes. Excluding **forest land grazed** and an estimated 98 million acres of **forest areas in special uses**, such as parks and wildlife areas, leaves 517 million acres of ungrazed **forest-use land**.

The “forest-use” category is based on the use of the forest land as opposed to the forest cover alone. The forest-use designation includes both grazed and ungrazed forests but excludes forest land in parks, wildlife areas, and other special uses. This reduced area is a closer approximation of the land

Table 8

### Total forest land, by major class and region, 2002

Region	Timberland			Reserved and other forest land <sup>2</sup>	Total forest land		
	Federal	Non-Federal	Total <sup>1</sup>		Federal	Non-Federal	Total <sup>1</sup>
	<i>1,000 acres</i>						
Northeast	1,588	64,883	66,471	6,455	2,236	70,688	72,924
Lake States	6,131	42,909	49,040	2,885	7,533	44,392	51,924
Corn Belt	2,510	28,794	31,304	1,425	2,857	28,872	32,729
Northern Plains	1,097	3,244	4,341	444	1,323	3,461	4,784
Appalachian	5,960	66,279	72,239	2,324	7,842	66,722	74,564
Southeast	4,731	68,930	73,661	2,510	6,167	70,004	76,171
Delta States	5,078	45,588	50,667	496	5,424	45,739	51,163
Southern Plains	1,111	16,896	18,007	6,806	1,293	26,521	24,814
Mountain	46,332	19,955	66,287	73,275	98,783	40,777	139,560
Pacific	30,428	28,532	58,960	32,714	49,533	42,141	91,674
48 States <sup>1</sup>	104,966	386,009	490,975	129,335	182,989	437,316	620,305
Alaska	4,750	7,115	11,865	115,004	63,423	63,446	126,869
Hawaii	0	700	700	1,049	12	1,736	1,748
United States <sup>1</sup>	109,717	393,823	503,540	245,388	246,425	502,497	748,922

<sup>1</sup> Distributions may not add due to rounding.

<sup>2</sup> Includes 98 million acres of forest land in parks, wildlife areas, and other special land uses.

Source: Smith et al., 2004.

that may be expected to serve commercial forest uses as opposed to having forest cover. While forest-use land generally declined from 1949 to 2002, forest-use land increased by almost 10 million acres (about 2 percent) from 1997 to 2002.

Land area in forests is about equally divided between the eastern half of the country and the western half, including the Plains States and Alaska (Smith et al., 2004). Forest predominates in the Northeast, Appalachian, Southeast, and Delta States regions, comprising 56-65 percent of all land in these regions. Forest land is also a relatively large share of the Lake States and Pacific regions, accounting for 43-45 percent of all land in these regions. Acreages in the Mountain region and Alaska are quite large but make up a smaller proportion of total land area in those regions (25 and 35 percent, respectively).

About 46 percent of the reserved and other forest land—parks, wilderness, and wildlife refuges, for example—is in the Southern Plains, Mountain, and Pacific regions, where it accounts for over 44 percent of all the forest land in those regions. Much of the remainder (47 percent) is in Alaska, where it accounts for 91 percent of all forest land in that State. In contrast, acreages of reserved and other forest land in the Eastern States are relatively small, accounting for no more than 10 percent of all forest land in any region east of the Mississippi River (Smith et al., 2004).

## Trends in Forest-Use Acreage

Forest-use land, which does not include the forest area counted under special uses, increased by 10 million acres (roughly 2 percent) from 1997 to 2002. This marked a reversal of a downward trend since 1949. The 651 million acres of forest-use land differs from the 749 million total forest acres estimated by the Forest Service because the latter includes multiple-use areas in special uses such as parks and wildlife refuges. Much of the 14-percent decline in forest-use land from 1949 to 2002 entailed reclassification of land from forest-use to **special-use areas** (see “Special Uses,” p. 31). Total forest land decreased less than 1 percent between 1953 and 2002 (Smith et al., 2004).

Total forest land, including multiple-use areas, declined from colonial times until about 1920, increased from 1920 to 1960, then trended downward until 1987 (USDA/FS, 1982; 1989). Total forest area has increased since 1987, rising by about 5 million acres between 1987 and 1992, by 10 million acres between 1992 and 1997, and by 2 million acres between 1997 and 2002. Forest land classed as timberland has followed a similar upward trend since 1987, when it was at a 35-year low of 485 million acres. Timberland area increased by 5 million acres over 1987-92, increased by 14 million acres over 1992-97, and stabilized over 1997-2002 at about 504 million acres (Smith et al., 2004).

Recent increases in timberland area are partially the result of a reclassification of some national forest lands due to standardization with protocols in use on other land ownerships. Some of the increases in total timberland since 1987 may also indicate a response to rising real prices for forest prod-

ucts. Based on a national analysis of National Resources Inventory data, Lubowski et al. (2003) estimate that the increase in net returns from timber production, combined with a decline in crop profits, were the major determinant of forest area change from 1982 to 1997. While timberland acreage increased nationally, changes were not uniform across the country. Some timber-producing States, such as California, Washington, and Michigan, experienced small decreases in timberland acreage from 1997 to 2002 (of 1, 0.4, and 0.3 percent, respectively).

Although grazed forest land constituted 14 percent of the total U.S. land area in 1949 (and 42 percent of the forest-use land), this share had dropped to less than 6 percent of the total land area (and 21 percent of the forest-use land) by 2002. Most of the forested land that had been grazed likely remained forested. However, forest-use land that was not grazed increased by just 77 million acres from 1949 to 2002, for an overall decline in forest-use land of 109 million acres (14 percent) during this period.

Forests under non-Federal ownership declined by 0.7 million acres (less than 0.5 percent) from 1997 to 2002. Acreage classified under all nonindustrial private ownerships remained at 291 million acres, while woodlands on farms declined by about 1 million acres (1 percent) from 1997 to 2002 (USDA/NASS, 1999a; 2004a). Federal timberland increased by about 0.6 million acres (1 percent) from 1997 to 2002, compared with a 13-million-acre increase from 1992 to 1997. Earlier declines in Federal timberland area from 1952 to 1992 were primarily the result of transferring timberland into reserved areas.